

Work Order ID 91385

October-05-12 11:36:32 AM

slip Oct. 25
91385

Page 1

Item ID: D4410-1 Accept *N9000040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Co-Pilot Collective Head
 Start Date: 10/05/12 Start Qty: 12.00 *12* Cust Item ID:
 Required Date: 10/12/12 Req'd Qty: 12.00 *12* Customer:
 Reference:

Approvals: Process Plan: MLJ Date: 12-10-05 Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D4410	B								

100 Cut blanks as per folio 0.00
 100
 Bandsaw Memo 0.00 OK 12/10/13 14
 Jeaspa Bandsaw CUT BLANK AT 5.00"

110 0.00
 110
 HAAS I Memo 0.00 OK 12/10/15 14
 HAAS CNC vertical machine #1 MACHINE AS PER DWG & FOLIO FB078
 FOLIO REV: AA
 DWG REV: B
 DEBURR FK 12/10/18

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____				DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div>					
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
Doc/Data <input type="checkbox"/>											
Equip/Tooling <input type="checkbox"/>											
Operator <input type="checkbox"/>											
Material <input type="checkbox"/>											
Setup <input type="checkbox"/>											
Other <input type="checkbox"/>											
Process <input type="checkbox"/>											
Supplier <input type="checkbox"/>											
Training <input type="checkbox"/>											
Unapproved <input type="checkbox"/>											

FAULT CATEGORY										
Landing Gear			General							
<input type="checkbox"/> Bending	<input type="checkbox"/> Centre Not Concentric to O/S	<input type="checkbox"/> Cracks	<input type="checkbox"/> Crushed/Crimped	<input type="checkbox"/> Cuffs	<input type="checkbox"/> Heat Treat	<input type="checkbox"/> Inspection Strip in Tube	<input type="checkbox"/> Ripples in Bend	<input type="checkbox"/> Torque Waves in Extrusion	<input type="checkbox"/> Turning Sequence	<input type="checkbox"/> Wave/Twist in Tube
<input type="checkbox"/> Bend	<input type="checkbox"/> BOM/Route	<input type="checkbox"/> Broken/Damaged	<input type="checkbox"/> Burrs	<input type="checkbox"/> Contamination	<input type="checkbox"/> Countersink	<input type="checkbox"/> Cut Too Short	<input type="checkbox"/> Drill Holes	<input type="checkbox"/> Drawing	<input type="checkbox"/> Finish	<input type="checkbox"/> Folio
<input type="checkbox"/> Grain	<input type="checkbox"/> Hardware	<input type="checkbox"/> Inspection Incomplete	<input type="checkbox"/> Instructions Incomplete/Unclear	<input type="checkbox"/> Maintenance	<input type="checkbox"/> Mislabeled	<input type="checkbox"/> Misread	<input type="checkbox"/> Offset	<input type="checkbox"/> Out of Calibration	<input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions
<input type="checkbox"/> Ovalized	<input type="checkbox"/> Over/Under tolerance	<input type="checkbox"/> Part Incorrect	<input type="checkbox"/> Part Lost/Missing	<input type="checkbox"/> Part Moved	<input type="checkbox"/> Positioned Wrong	<input type="checkbox"/> Power Loss/Surge	<input type="checkbox"/> Pressure/Forced	<input type="checkbox"/> Temperature/Cure	<input type="checkbox"/> Weld	<input type="checkbox"/> Wrong Stock Pulled
						<input type="checkbox"/> Other				
<div style="border-bottom: 1px solid black; height: 15px; width: 100%;"></div> <div style="border-bottom: 1px solid black; height: 15px; width: 100%;"></div> <div style="border-bottom: 1px solid black; height: 15px; width: 100%;"></div>										

Work Order ID 91385

October-05-12 11:36:33 AM

91385

Page 2

Item ID: D4410-1 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Co-Pilot Collective Head
Start Date: 10/05/12 Start Qty: 12.00 ***12*** Cust Item ID:
Required Date: 10/12/12 Req'd Qty: 12.00 ***12*** Customer:
Reference:

Approvals: Process Plan: Date: Tooling: Date: Run Start ***NR1***
QC: Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 *120* QC Quality Control	QC2- Inspect parts off machine FAI/FAIB Memo	0.00 0.00		<i>OK 12/10/15</i> <i>FK 12/10/18</i>		<i>14</i>			
130 *130* QC Quality Control	QC8- Inspect parts - second check Memo	0.00 0.00		<i>AD 12-10-18</i>		<i>14</i>			
140 *140* Packaging Packaging	Identify as per dwg & Stock Location: <i>W/A</i> Memo	0.00 0.00				<i>14</i>		<i>EL 12-10-22</i>	

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____				DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div>					
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
Doc/Data <input type="checkbox"/>											
Equip/Tooling <input type="checkbox"/>											
Operator <input type="checkbox"/>											
Material <input type="checkbox"/>											
Setup <input type="checkbox"/>											
Other <input type="checkbox"/>											
Process <input type="checkbox"/>											
Supplier <input type="checkbox"/>											
Training <input type="checkbox"/>											
Unapproved <input type="checkbox"/>											

FAULT CATEGORY				
Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio	<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions	<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge	<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other

Work Order ID 91385

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91385

Page 3

Item ID:	D4410-1	Accept	*N900040100*	Setup	Start	*NS1*
Revision ID:					Stop	*NS2*
Item Name:	Co-Pilot Collective Head					
Start Date:	10/05/12	Start Qty: 12.00	*12*	Cust Item ID:		
Required Date:	10/12/12	Req'd Qty: 12.00	*12*	Customer:		
Reference:						

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	*NR1*
	QC:	Date:	SPC (Y/N):	Date:		Stop	*NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	QC21- Final Inspection - Work Order Release	0.00							
150									
QC	Memo	0.00							
Quality Control									

12/10/22 [Signature]
WF
12-10-22

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data									
Equip/Tooling									
Operator									
Material									
Setup									
Other									
Process									
Supplier									
Training									
Unapproved									

FAULT CATEGORY

Landing Gear	General	Other
<input type="checkbox"/> Bending	<input type="checkbox"/> Bend	<input type="checkbox"/> Grain
<input type="checkbox"/> Centre Not Concentric to O/S	<input type="checkbox"/> BOM/Route	<input type="checkbox"/> Hardware
<input type="checkbox"/> Cracks	<input type="checkbox"/> Broken/Damaged	<input type="checkbox"/> Inspection Incomplete
<input type="checkbox"/> Crushed/Crimped	<input type="checkbox"/> Burrs	<input type="checkbox"/> Instructions Incomplete/Unclear
<input type="checkbox"/> Cuffs	<input type="checkbox"/> Contamination	<input type="checkbox"/> Maintenance
<input type="checkbox"/> Heat Treat	<input type="checkbox"/> Countersink	<input type="checkbox"/> Mislabeled
<input type="checkbox"/> Inspection Strip in Tube	<input type="checkbox"/> Cut Too Short	<input type="checkbox"/> Misread
<input type="checkbox"/> Ripples in Bend	<input type="checkbox"/> Drill Holes	<input type="checkbox"/> Offset
<input type="checkbox"/> Torque Waves in Extrusion	<input type="checkbox"/> Drawing	<input type="checkbox"/> Out of Calibration
<input type="checkbox"/> Turning Sequence	<input type="checkbox"/> Finish	<input type="checkbox"/> Out of Sequence
<input type="checkbox"/> Wave/Twist in Tube	<input type="checkbox"/> Folio	<input type="checkbox"/> Outside Dimensions
		<input type="checkbox"/> Ovalized
		<input type="checkbox"/> Over/Under tolerance
		<input type="checkbox"/> Part Incorrect
		<input type="checkbox"/> Part Lost/Missing
		<input type="checkbox"/> Part Moved
		<input type="checkbox"/> Positioned Wrong
		<input type="checkbox"/> Power Loss/Surge
		<input type="checkbox"/> Pressure/Forced
		<input type="checkbox"/> Temperature/Cure
		<input type="checkbox"/> Weld
		<input type="checkbox"/> Wrong Stock Pulled
		<input type="checkbox"/> Other

Picklist Print

October-05-12 11:36:32 AM

Page 1

Work Order ID: 91385

Parent Item: D4410-1

Parent Item Name: Co-Pilot Collective Head

Start Date: 10/05/12

Required Date: 10/12/12

Start Qty: 12.00

Required Qty: 12.00

Comments: IPP REV:A NEW ISSUE 11/11/16 JFS VERIFY BY:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M6061T6B4.500X4.500 6061-T6 AluminumBar 4.500" X 4.500"		Purchased	No			100	f	10.2160	0.42	5.3052636			

Location

Loc Qty

Loc Code

MAT004

10.216

119581

10.216

6.190 ml 12/10/13

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

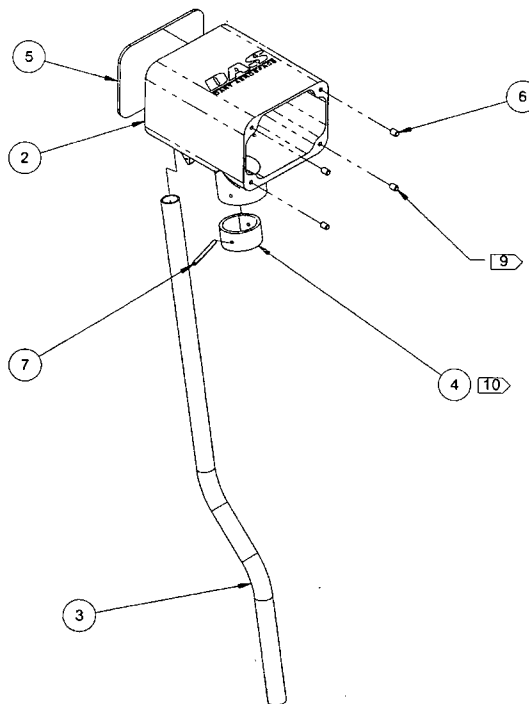
DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____				DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div>						
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector			
Doc/Data <input type="checkbox"/>												
Equip/Tooling <input type="checkbox"/>												
Operator <input type="checkbox"/>												
Material <input type="checkbox"/>												
Setup <input type="checkbox"/>												
Other <input type="checkbox"/>												
Process <input type="checkbox"/>												
Supplier <input type="checkbox"/>												
Training <input type="checkbox"/>												
Unapproved <input type="checkbox"/>												
FAULT CATEGORY												
Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube			General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio			<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions			<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge		<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other	

ITEM NO.	QTY. -041	PART NUMBER	DESCRIPTION
1	X	D4410-041	CO-PILOT COLLECTIVE HEAD ASSEMBLY (205)
2	1	D4410-1	CO-PILOT COLLECTIVE HEAD
3	1	D4410-7	CONDUIT
4	1	D4410-11	205 SHIM
5	1	D4410-15	REAR COVER
6	4	90296A108	HELI-COIL INSERT (6-32 X 0.276)
7	1	MS171539	PIN

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 91385 M4J
12-10-05



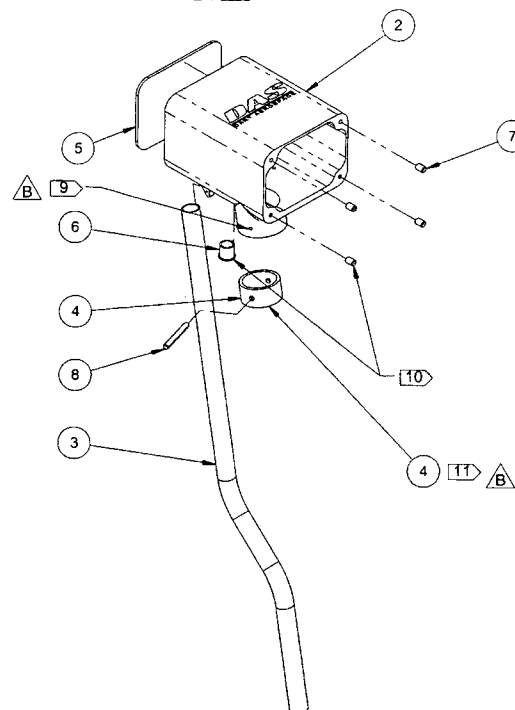
D4410-041 CO-PILOT COLLECTIVE HEAD ASSEMBLY (205)

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: ANODIZE BLACK PER MIL-A-8625F TYPE I OR IB OR IC OR II OR IIB CLASS 2 AFTER WELDING
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 1.55 lbs
- 8) WELD PER DART QSI 004
- 9) INSTALL AFTER ANODIZING
- 10) INSTALL AFTER ANODIZING WET WITH PROSEAL 890 OR EQUIVALENT ENSURE THAT PROSEAL DOES NOT CONTACT PIN

B	ADD C-BORE, ZN A4-2. ENLARGE HOLES, ZN C5-3 & B8-3. UPDATE LOGO, ADD -045/-11/-13/-15. ROTATE HOLE, ZN C3-2. INCREASE -7 DIAMETER, ZN C1-6. REMOVE -9 FROM -041 ASSEMBLY, ZN C5-1.	DC	12.07.30
A	NEW ISSUE	DC	11.06.06
REV.	DESCRIPTION	BY	DATE
DESIGN	DC	DART AEROSPACE USA, INC. KENT, WA	
DRAWN	DC		
CHECKED	DC	DRAWING NO.	REV. B
MFG. APPR.	DC	D4410	SHEET 1 OF 12
APPROVED	DC	TITLE	SCALE
DE APPR.	DC	CO-PILOT COLLECTIVE HEAD	NTS
DATE	12.07.30	COPYRIGHT © 2011 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMBINED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

ITEM NO.	QTY. -043	PART NUMBER	DESCRIPTION
1	X	D4410-043	CO-PILOT COLLECTIVE HEAD ASSEMBLY (212)
2	1	D4410-1	CO-PILOT COLLECTIVE HEAD
3	1	D4410-7	CONDUIT
4	1	D4410-13	212 SHIM
5	1	D4410-15	REAR COVER
6	1	D4413-1	DOME PLUG
7	4	90296A108	HELI-COIL INSERT (6-32 X 0.276)
8	1	MS171599	PIN



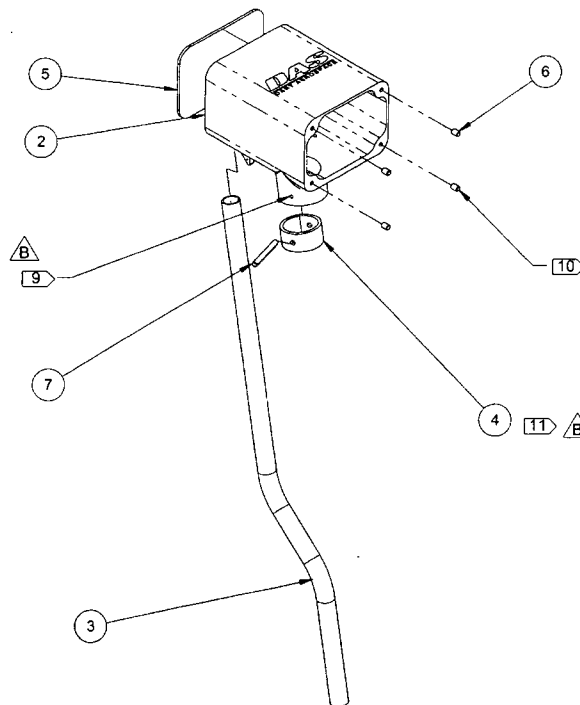
D4410-043 CO-PILOT COLLECTIVE HEAD ASSEMBLY (212)

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: ANODIZE BLACK PER MIL-A-8625F TYPE I OR IB OR IC OR II OR IIB CLASS 2 AFTER WELDING
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 1.55 lbs
- 8) WELD PER DART QSI 004
- 9) REAM TO Ø0.177 (DRILL #16)
- 10) INSTALL AFTER ANODIZING
- 11) INSTALL AFTER ANODIZING WET WITH PROSEAL 890 OR EQUIVALENT ENSURE THAT PROSEAL DOES NOT CONTACT PIN

DESIGN	DC	DART AEROSPACE USA, INC.	
DRAWN	DC	KENT, WA	
CHECKED	DC	DRAWING NO.	REV. B
MFG. APPR.	DC	D4410	SHEET 2 OF 12
APPROVED	DC	TITLE	SCALE
DE APPR.	DC	CO-PILOT COLLECTIVE HEAD NTS	
DATE	12.07.30	COPYRIGHT © 2011 BY DART AEROSPACE USA, INC.	
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.			

ITEM NO.	QTY. -045	PART NUMBER	DESCRIPTION
1	X	D4410-045	CO-PILOT COLLECTIVE HEAD ASSEMBLY (EAGLE SINGLE)
2	1	D4410-1	CO-PILOT COLLECTIVE HEAD
3	1	D4410-7	CONDUIT
4	1	D4410-13	212 SHIM
5	1	D4410-15	REAR COVER
6	4	90296A108	HELI-COIL INSERT (6-32 X 0.276)
7	1	MS171599	PIN



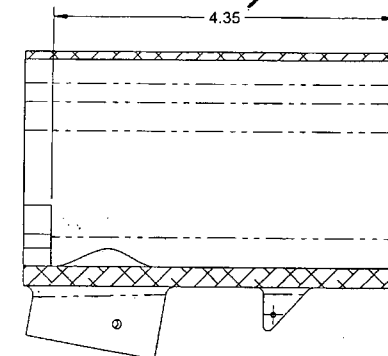
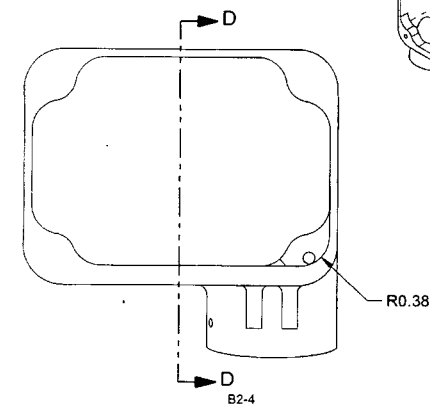
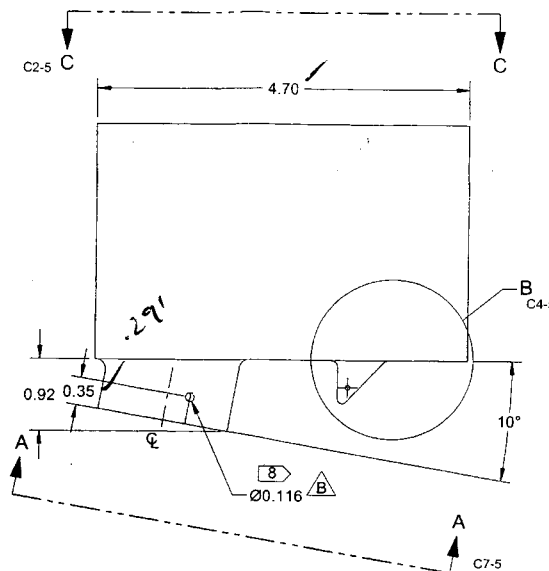
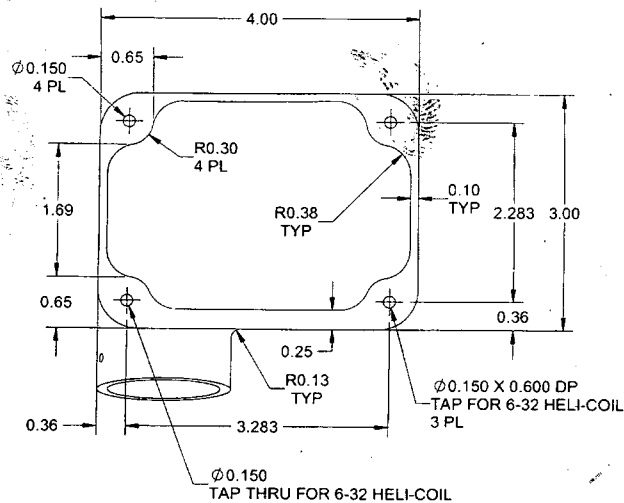
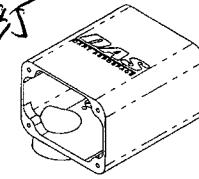
**D4410-045 CO-PILOT COLLECTIVE HEAD ASSEMBLY
(EAGLE SINGLE)**

NOTES:

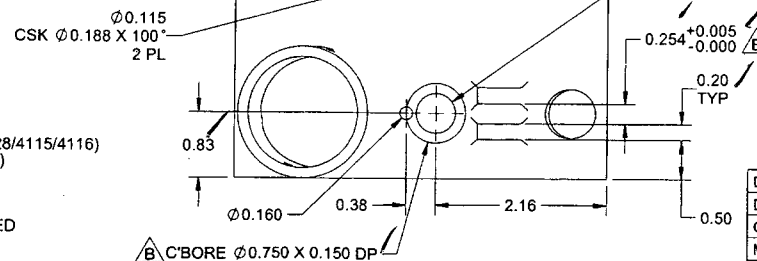
- 1) MATERIAL: N/A
- 2) FINISH: ANODIZE BLACK PER MIL-A-8625F TYPE I OR IB OR IC OR II OR IIB CLASS 2 AFTER WELDING
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 1.55 lbs
- 8) WELD PER DART QSI 004
- 9) REAM TO Ø0.177 (DRILL #16)
- 10) INSTALL AFTER ANODIZING
- 11) INSTALL AFTER ANODIZING WET WITH PROSEAL 890 OR EQUIVALENT ENSURE THAT PROSEAL DOES NOT CONTACT PIN

DESIGN	DC	DART AEROSPACE USA, INC.	
DRAWN	DC	KENT, WA	
CHECKED	DC	DRAWING NO.	REV. B
MFG. APPR.	DC	D4410	SHEET 3 OF 12
APPROVED	DC	TITLE	SCALE
DE APPR.	DC	CO-PILOT COLLECTIVE HEAD	NTS
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91385



- NOTES:
- 1) MATERIAL: 6061-T6/T651/T6511/T62 ALUMINUM BAR
QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)
OR ASTM B211 OR ASTM B221
REF. DART SPEC. M6061T6B4.000X3.000
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
 - 7) WEIGHT: 1.24 lbs
 - 8) HOLE IS ROTATED 20° COUNTER-CLOCKWISE WHEN VIEWED FROM ABOVE



D4410-1 CO-PILOT COLLECTIVE HEAD

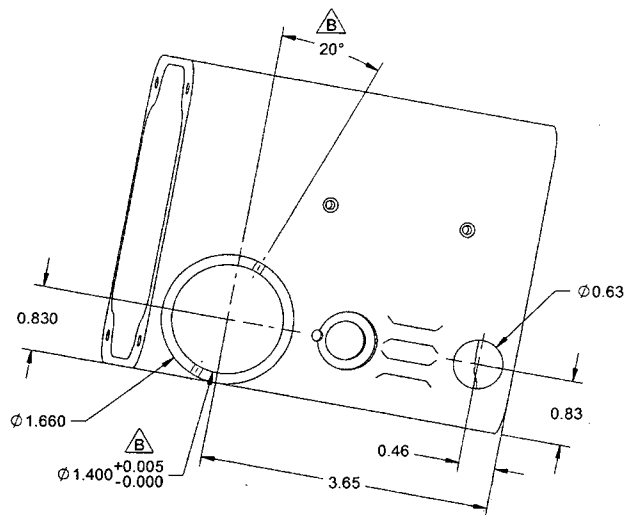
SECTION D-D
D2-4

RELEASE
2012-09-28 L

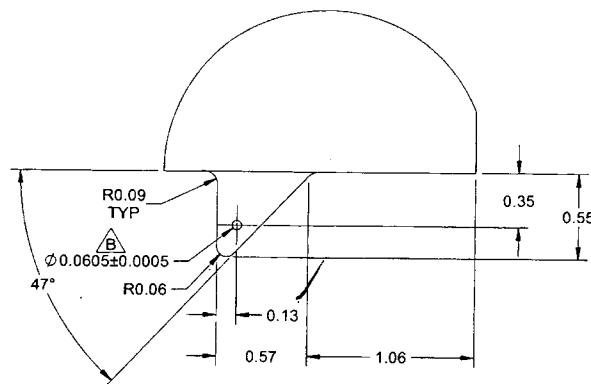
DESIGN	BC	DART AEROSPACE USA, INC.	
DRAWN	BC	KENT, WA	
CHECKED	BC	DRAWING NO. D4410	REV. B
MFG. APPR.	BC		SHEET 4 OF 12
APPROVED	BC	TITLE	SCALE
DE APPR.	BC	CO-PILOT COLLECTIVE HEAD	NTS
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632-0241

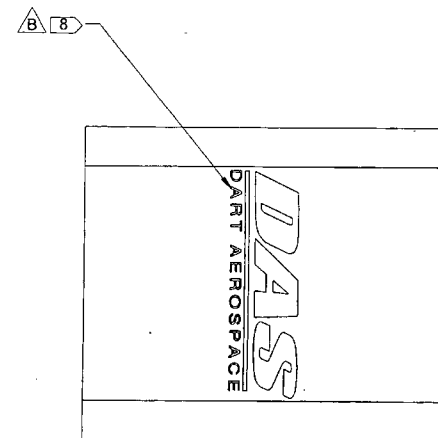
91385



VIEW A-A
C5-4



DETAIL B
C4-4



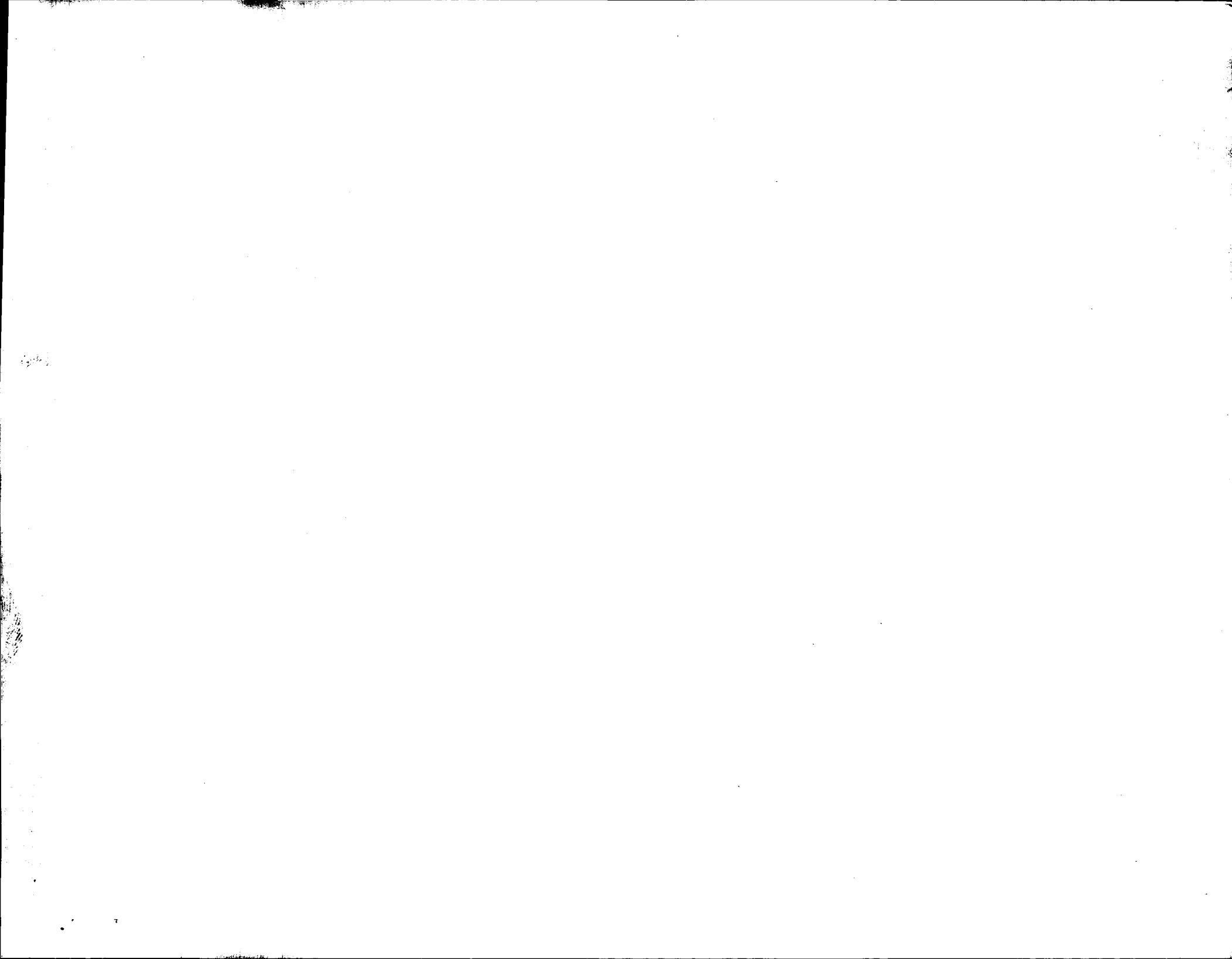
VIEW C-C
D4-4

**D4410-1 CO-PILOT COLLECTIVE HEAD
DETAIL VIEWS**

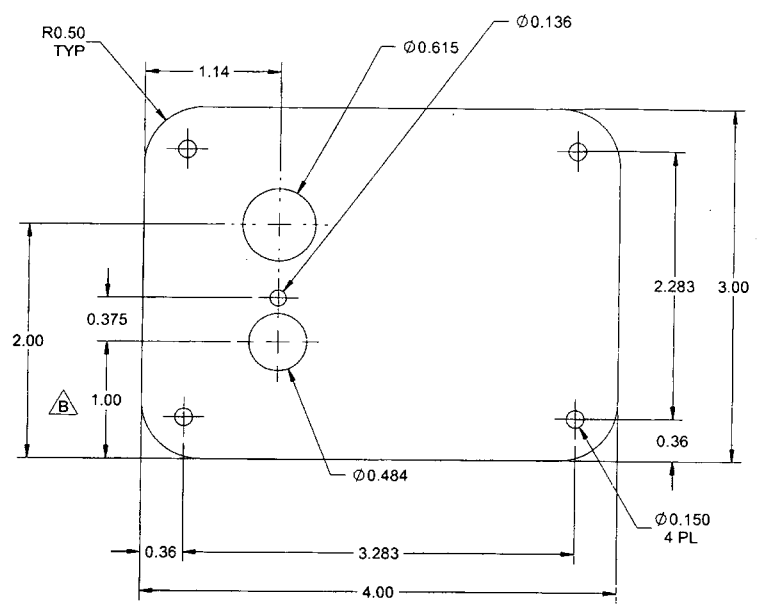
RELEASED
2012-09-28

- NOTES:**
- 1) MATERIAL: N/A
 - 2) FINISH: N/A
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: N/A
 - 7) WEIGHT: N/A
 - 8) ENGRAVE "DAS" LOGO AS SHOWN 0.003 - 0.005 DP.

DESIGN	BC	DART AEROSPACE USA, INC.	
DRAWN	BC	KENT, WA	
CHECKED	BC	DRAWING NO.	REV. B
MFG. APPR.	BC	D4410	SHEET 5 OF 12
APPROVED	BC	TITLE	SCALE
DE APPR.	BC	CO-PILOT COLLECTIVE HEAD	NTS
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91385



D4410-3 FACE PLATE

NOTES:

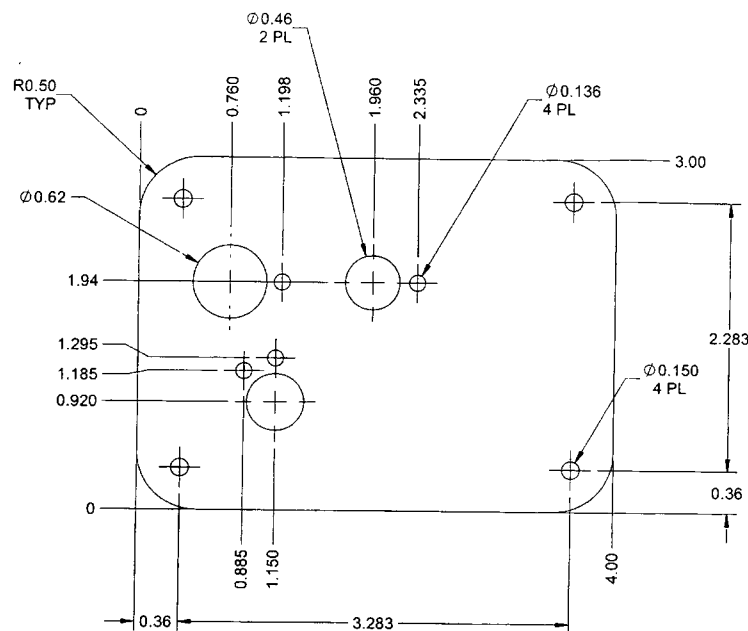
- 1) MATERIAL: 6061-T6/T62 ALUMINUM SHEET, 0.040 THK
QQ-A-250/11 OR AMS-QQ-A-250/11
OR AMS 4025 OR AMS 4027
OR ASTM B209
REF. DART SPEC. M6061T6S.040
- 2) FINISH: ANODIZE BLACK PER MIL-A-8625F TYPE I OR IB OR IC OR II OR IIB CLASS 2
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.04 lbs

DESIGN	DC	DART AEROSPACE USA, INC. KENT, WA
DRAWN	DC	
CHECKED	AS	DRAWING NO. D4410 REV. B
MFG. APPR.	AT	SHEET 6 OF 12
APPROVED	MP	TITLE CO-PILOT COLLECTIVE HEAD SCALE NTS
DE APPR.	TH	
DATE	12.07.30	

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2012-09-28

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D4410-5 FACE PLATE

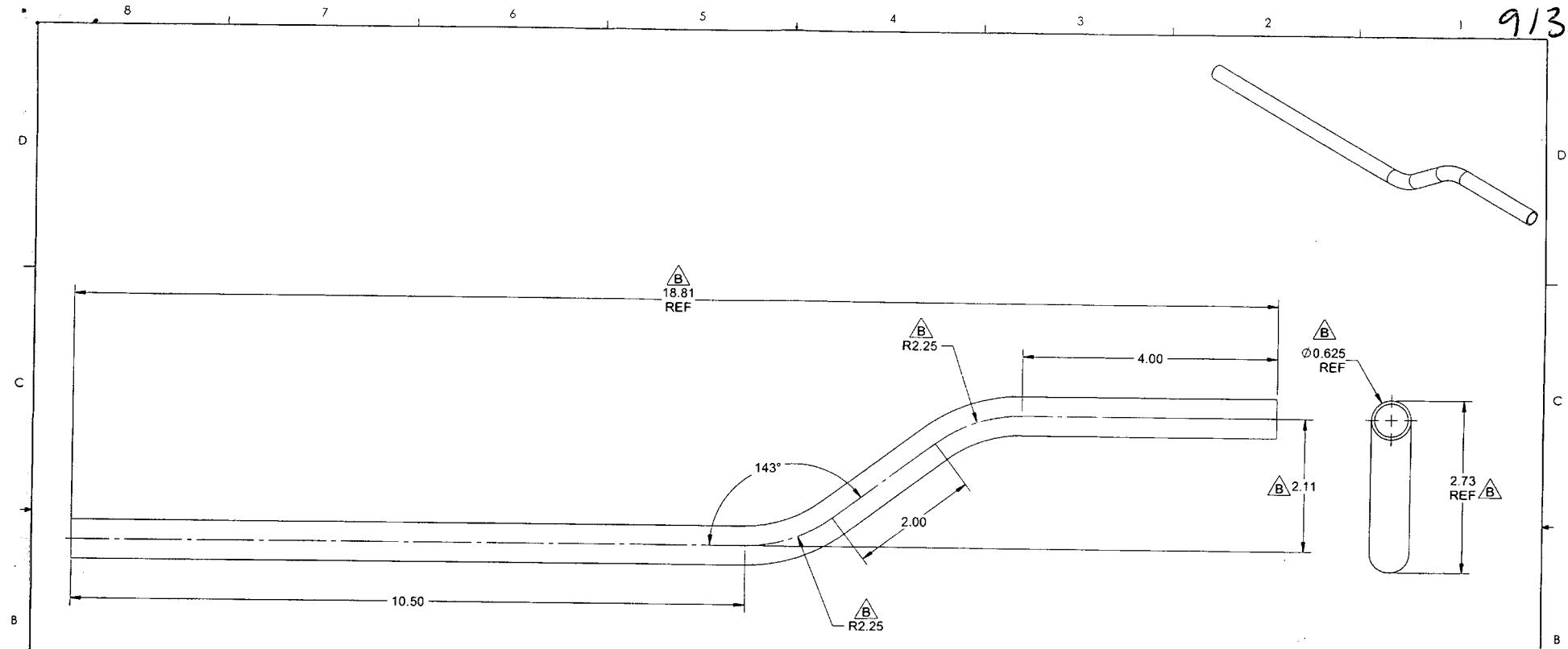
NOTES:

- 1) MATERIAL: 6061-T6/T62 ALUMINUM SHEET, 0.040 THK
QQ-A-250/11 OR AMS-QQ-A-250/11
OR AMS 4025 OR AMS 4027
OR ASTM B209
REF. DART SPEC. M6061T6S.040
- 2) FINISH: ANODIZE BLACK PER MIL-A-8625F TYPE I OR IB OR IC OR II OR IIB CLASS 2
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.04 lbs

RELEASED
2012-09-28

DESIGN	DC	DART AEROSPACE USA, INC.	
DRAWN	DC	KENT, WA	
CHECKED	BE	DRAWING NO.	REV. B
MFG. APPR.	DI	D4410	SHEET 7 OF 12
APPROVED	MD	TITLE	SCALE
DE APPR.	HA	CO-PILOT COLLECTIVE HEAD	NTS
DATE	12.07.30	<small>COPYRIGHT © 2011 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

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D4410-7 CONDUIT

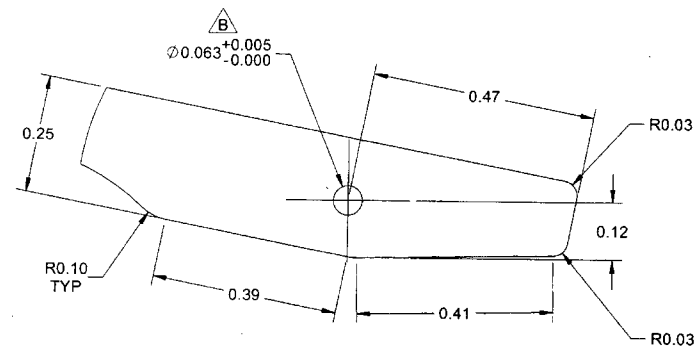
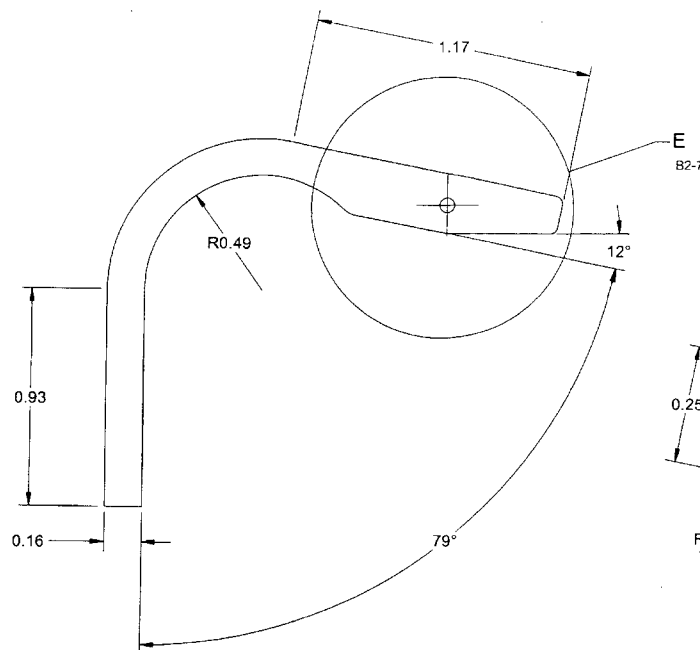
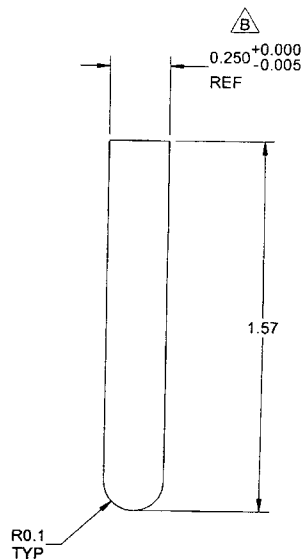
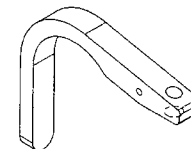
RELEASED
2012-09-28
JMD

NOTES:

- 1) MATERIAL: 6061-T6 OR 6061-T62 ALUMINUM TUBING PER WW-T-700/6 OR AMS 4080 OR AMS 4082 OR QQ-A-200/8 OR QQ-A-225/8 REF. DART SPEC. M6061T60.625W.050 $\triangle B$
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.17 lbs

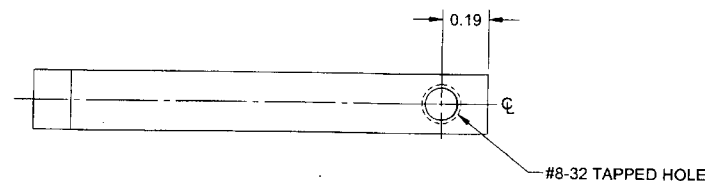
DESIGN	BC	DART AEROSPACE USA, INC.	
DRAWN	BC	KENT, WA	
CHECKED	BC	DRAWING NO.	REV. B
MFG. APPR.	BC	D4410	SHEET 8 OF 12
APPROVED	BC	TITLE	SCALE
DE APPR.	BC	CO-PILOT COLLECTIVE HEAD	NTS
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91385



DETAIL E

D4-7



D4410-9 TRIGGER

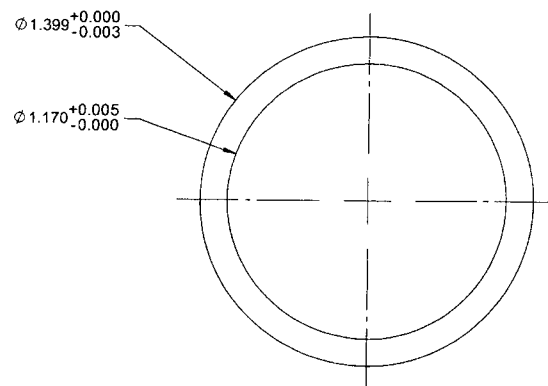
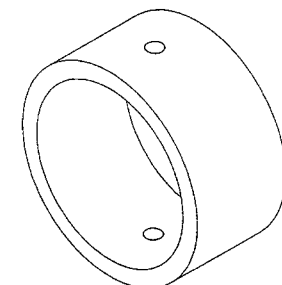
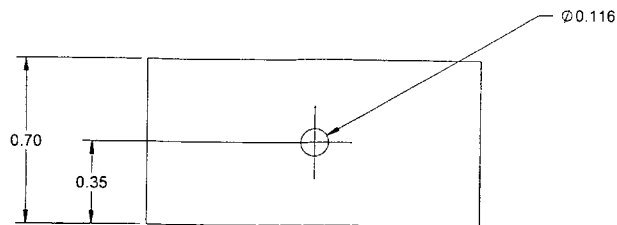
NOTES:

- 1) MATERIAL: 6061-T6/T62 ALUMINUM SHEET, 0.250 THK
QQ-A-250/11 OR AMS-QQ-A-250/11
OR AMS 4025 OR AMS 4027
OR ASTM B209
REF. DART SPEC. M6061T6S.250
- 2) FINISH: ANODIZE BLACK PER MIL-A-8625F TYPE I OR IB OR IC OR II OR IIB CLASS 2
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.01 lbs

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2012-09-28

DESIGN	BC	DART AEROSPACE USA, INC.	
DRAWN	BC	KENT, WA	
CHECKED	BC	DRAWING NO.	REV. B
MFG. APPR.	BC	D4410	SHEET 9 OF 12
APPROVED	BC	TITLE	SCALE
DE APPR.	BC	CO-PILOT COLLECTIVE HEAD NTS	
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D4410-11 205 SHIM

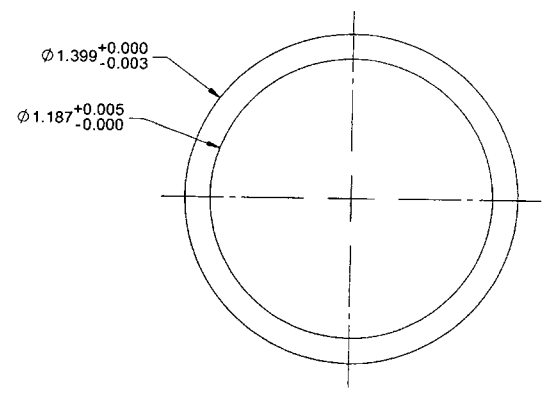
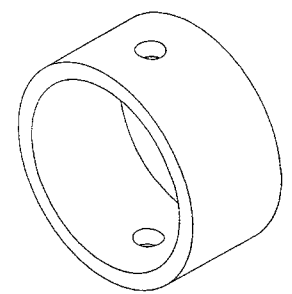
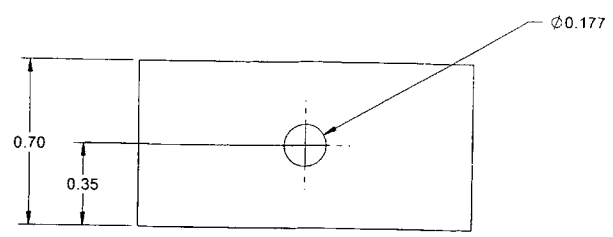
RELEASED
2012-09-23

NOTES:

- 1) MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM ROUND BAR
 QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)
 OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)
 OR ASTM B211 OR ASTM B221
 REF. DART SPEC. M6061T6R1.500
- 2) FINISH: ANODIZE BLACK PER MIL-A-8625F TYPE I OR IB OR IC OR II OR IIB CLASS 2
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.03 lbs

DESIGN	BC	DART AEROSPACE USA, INC.	
DRAWN	BC	KENT, WA	
CHECKED	BC	DRAWING NO.	REV. B
MFG. APPR.	BC	D4410	SHEET 10 OF 12
APPROVED	BC	TITLE	SCALE
DE APPR.	BC	CO-PILOT COLLECTIVE HEAD	NTS
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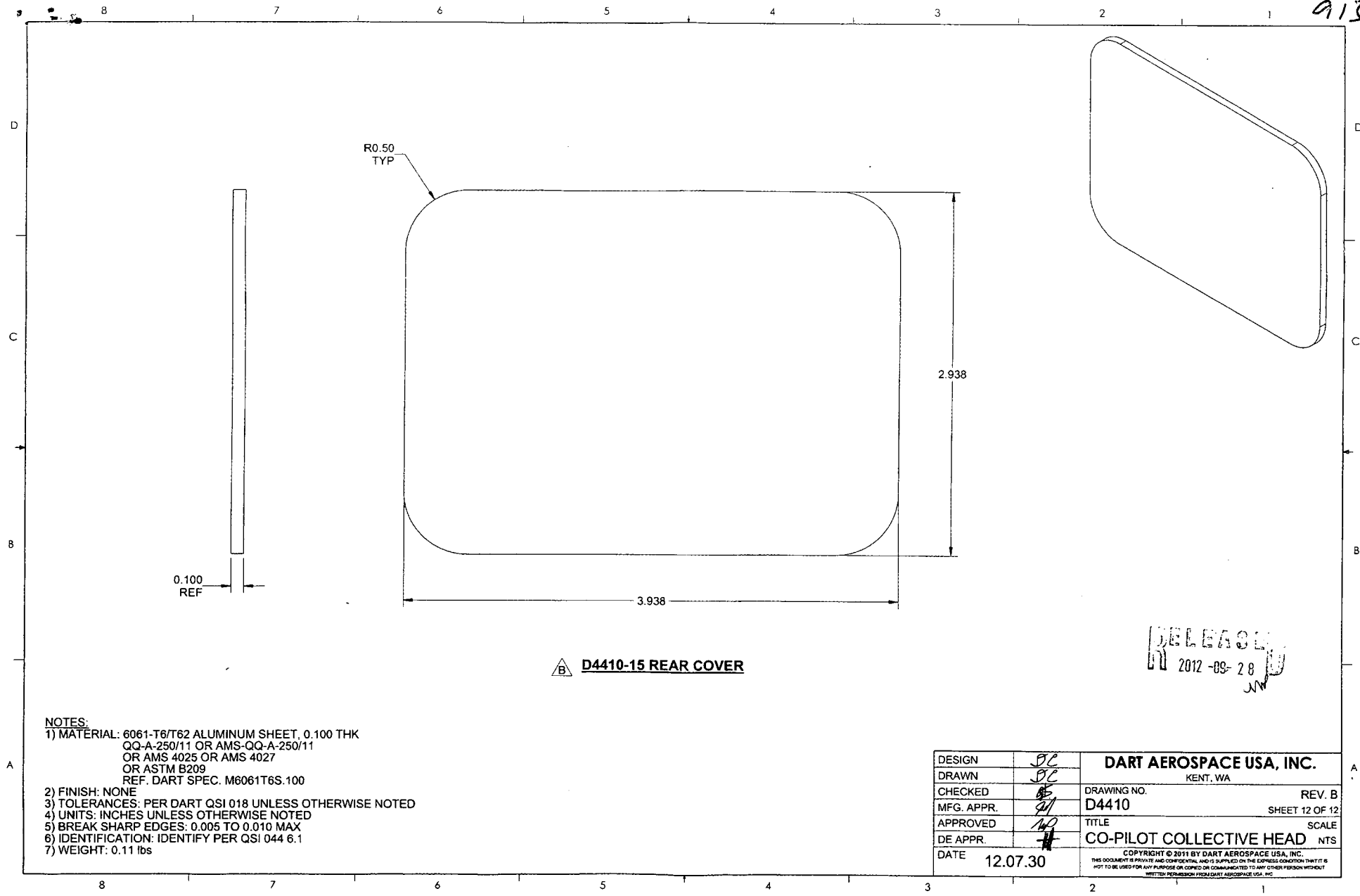
D4410-13 212 SHIM

RELEASED
2012-09-28
LMP

- NOTES:**
- 1) MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM ROUND BAR
QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)
OR ASTM B211 OR ASTM B221
REF. DART SPEC. M6061T6R1.500
 - 2) FINISH: ANODIZE BLACK PER MIL-A-8625F TYPE I OR IB OR IC OR II OR IIB CLASS 2
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
 - 7) WEIGHT: 0.03 lbs

DESIGN	DC	DART AEROSPACE USA, INC. KENT, WA	
DRAWN	DC		
CHECKED	SE	DRAWING NO. D4410	REV. B
MFG. APPR.	ST	SHEET 11 OF 12	
APPROVED	LD	TITLE	SCALE
DE APPR.	ST	CO-PILOT COLLECTIVE HEAD	NTS
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91385



D4410-15 REAR COVER

RELEASED
2012-09-28
JW

NOTES:

- 1) MATERIAL: 6061-T6/T62 ALUMINUM SHEET, 0.100 THK
QQ-A-250/11 OR AMS-QQ-A-250/11
OR AMS 4025 OR AMS 4027
OR ASTM B209
REF. DART SPEC. M6061T6S.100
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.11 lbs

DESIGN	DC	DART AEROSPACE USA, INC. KENT, WA	
DRAWN	DC		
CHECKED	BE	DRAWING NO.	REV. B
MFG. APPR.	21	D4410	SHEET 12 OF 12
APPROVED	140	TITLE	SCALE
DE APPR.	H	CO-PILOT COLLECTIVE HEAD	NTS
DATE	12.07.30	<small>COPYRIGHT © 2011 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMBINED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

DART AEROSPACE LTD	Work Order: 91385
Description: CD-PILOT COLLECTIVE HEAD	Part Number: D4410-1
Inspection Dwg: D4410 Rev: B	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
4.00	$\pm .030$	4.003	✓		Vern ML-06	
3.00	$\pm .030$	3.003	—		"	
2.283	$\pm .005$	2.283	—		"	
.36	$\pm .030$.360	—		"	
.10	$\pm .030$.103	—		"	
Ø.150	$\pm .005$	Ø.152	—		"	
.600	$\pm .010$.600	—		"	
.25	$\pm .030$.252	—		"	
R.13	$\pm .030$	R.125	—		"	
3.283	$\pm .005$	3.283	—		"	
.36	$\pm .030$.360	—		"	
1.69	$\pm .030$	1.690	—		"	
.65	$\pm .030$.650	—		"	
4.70	$\pm .030$	4.697	—		"	
10°	$\pm \frac{1}{2}^\circ$	10°	—		C-Angle ML-CBB	
Ø.116	$\pm .004$	Ø.118	—		Vern ML-06	
.35	$\pm .030$.354	—		"	
.92	$\pm .030$.925	—		"	
R.38	$\pm .030$	R.375	—		R-6	
4.35	$\pm .030$	4.350	—		Vern ML-06	
1.50	$\pm .030$	1.500	—		"	
2.00	$\pm .030$	1.997	—		"	
1.782	$\pm .005$	1.782	—		"	

Measured by: DAS 14 / Ek	Audited by: [Signature]	Preliminary Approval:
Date: 12/10/15	Date: 12-10-18	Date:

Rev	Date	Change	Revised by	Approved
E	10.04.14	Added preliminary approval	KJ	

10.04.15

DART AEROSPACE LTD	Work Order: 91385
Description: CD-PILOT COLLECTIVE HEAD	Part Number: D4410-1
Inspection Dwg: D4410 Rev: B	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø.500	+0.06 -0.01	Ø.502	—		Vern ML-06	
.254	+0.04 -0.00	.2545	—		"	
.20	±0.30	.200	—		"	
.50	±0.30	.504	—		"	
.38	±0.05	.375	—		"	
Ø.160	±0.05 ±0.01	Ø.162	—		"	
.83	±0.30	.829	—		"	
Ø.115	+0.04 ±0.01	Ø.115	—		"	
Ø.188X100°	±0.10	Ø.188X100°	—		"	
Ø.750	+0.07 ±0.01	Ø.751	—		"	
.150	±0.10	.1505	—		"	
20°	±1/2°	20°	—		C-Apex ML-LBB	
Ø.63	±0.30	Ø.625	—		"	
.83	±0.30	.830	—		"	
.46	±0.30	.455	—		"	
3.65	±0.30	3.653	—		"	
Ø1.400	±0.05 ±0.00	Ø1.403	—		"	
Ø1.660	±0.10	Ø1.658	—		"	
.55	±0.30	.554	—		"	
.35	±0.30	.350	—		"	
1.06	±0.30	1.045	—		"	
.13	±0.30	.130	—		"	
.57	±0.30	.575	—		"	

Measured by: DAS 14 / Fk	Audited by: [Signature]	Preliminary Approval:
Date: 12/10/15	Date: 12-10-18	Date:

Rev	Date	Change	Revised by	Approved
E	10.04.14	Added preliminary approval	KJ	

10.04.15

